

# Industrial Hygiene and Sanitation.

**Industrial Medical Supervision.**—Large industrial concerns are beginning to adopt medical supervision, both as an economic measure as it affects the employers, and in the interest of the employees. A pamphlet issued by the Eastman Kodak Company contains the address of its medical officer, Dr. Guy L. Howe, to the Rochester Chamber of Commerce. He describes the plan of organization of the medical work and some of the results. The work is divided into physical examination, care of accidents, care of sickness, sanitary inspection and health publicity. Every applicant for work who qualifies, by his own consent, undergoes a physical examination to determine his fitness for the work he expects to do. This examination includes a study of the heart and lungs, a test of the eyes for astigmatism, colorblindness and near and far vision, and a test of the hearing. Teeth, throat and neck are examined and a urinalysis is made. Rupture, flatfoot, varicose veins, hemorrhoids and evidence of communicable diseases are looked for. Vaccination is required in all who have not been successfully vaccinated within fifteen years. Anemia is looked for and blood pressures taken when deemed necessary. As instances of the findings among the 6,000 employees it is said that moderate elevated blood pressure was found in 28, and serious in 42, or 1.1 per cent.; moderate heart disease in 38 and serious in 18, or 0.77 per cent.; ruptures (moderate) in 116 and severe in 39, or 2.57 per cent. Eight patients with tuberculosis are under treatment in sanatoriums or by open air methods at the expense of the company. Poor teeth which should have the attention of the dentist were found in 90 per cent., and in 1,557, or 25 per cent. of all employees, the dental defects were such that failure of treatment amounted to serious neglect. By these methods of examinations carried out periodically, incipient defects are discovered, and they also afford a basis of comparison of the physical status of employees from year to year. Instances are given in which the discovery of serious defects permitted the shifting of men to other work which they could do without injury. Specially defective employees to the number of 281 are examined every

six or twelve months, and all dining room employees every three months. In accident cases the services of the company physician are available throughout until recovery, and hospital and consultation fees and the cost of roentgenograms are provided at company expense. This procedure was effective before the enactment of the workmen's compensation law. This law does not require the treatment of sickness among employees, but this constitutes a large part of the work of the medical department. From fifty to a hundred cases of minor illness are said to be taken care of every day. The department acts as a medical clearing house, determining when an employee is fit to remain at work and when he should be in bed. Employees are recommended to employ their family physicians, as determined by two questions: Would the man go to his physician if the department did not treat him, and could he afford to pay the necessary fee? A negative answer to either would determine treatment by the medical department. It is said, however, that ten patients are placed in the hands of the local medical profession to one who is taken away. Sanitary inspection each month has been arranged for in all factories, in dining rooms, workshops, washrooms, lockers, and of drinking water. A monthly health bulletin is distributed to employees, and a health manual has been prepared. —*Jour. A. M. A.*, Feb. 26, 1916.



**Fatigue and Efficiency.**—In a current number of *Collier's*, Dr. John B. Huber makes this comment on Fatigue and Efficiency:

"Efficiency decreases as fatigue begins, and it ends far short of exhaustion. Enterprisers find that it pays to alternate judiciously work and rest; to eliminate all unnecessary motions; to guard the worker against molestation or interruption; to have light, ventilation, and other factors agreeable; and to take counsel of the physician, the sanitarian, and the psychologist. There is, in the worker's tired brain, nerves, and muscles, danger not only to himself but to others. The number of accidents increases

progressively during the morning as fatigue comes on; drops after the noon recess; rises hour after hour until the end of the working day. The same obtains with brain work as with muscle work; there is in science really no difference. Bank managers long ago recognized the relation of fatigue to efficiency, and have therefore closed their tellers' windows at three; less expensive this than the mistakes of tired employees. How often has the overwrought dispatcher sent trains into collision! Fatigue, nerve tension, hurry, and worry are perverse and uneconomic factors; and when to these alcoholism is added the human machine—normally the best self-repairing apparatus in the world—is sure to go, most pathetically and all too prematurely, to the scrap heap. Here is what the General Safety Committee of the Raritan (N. J.) Copper Works has noted in its publication, *The Ingot*:

"Between eight and nine, the first hour of the shift, is the danger hour as to accidents; also more accidents occur on Monday mornings than at any other time; also on mornings following holidays than on the mornings of other days. To any man that can think in a straight line all this means just one thing. It is a plain fact, and we'll state it plainly: Too much drinking at night means foggy eyes and unsteady nerves next morning. Then the accidents pile up. Now, let's get right down to brass tacks. This is no grape-juice journal. We hold no brief for prohibition. What we are working for is safety. Cut down the booze and, as surely as night follows day, you will cut down the accidents.'"



**The Pace that Kills.**—"Doctors have told us often in late years, that our pace is too fast—that we are living not wisely but too well. Insurance companies, from motives that are entirely obvious, are urging reform; lately they have united in an effort to find out precisely what is wrong with our manner of living and to provide a remedy.

"To that end, the Life Extension Bureau of New York, through Dr. Lyman Fisk, medical director, has been making an investigation. A group of 1,000 skilled mechanics was examined and later another group of 1,000 clerks. The object, of course, was to compare the health of men who had active lives with the general

health of men whose business is of a sedentary character.

"It was found, according to word from the Doctor, that the mechanics, as a whole, were little, if any, better off than the clerks. The active workers presented fewer cases of heart disease, but more cases of thickened arteries. Bad blood pressure was slightly more prevalent among the clerks than among the factory employees, but the latter showed twice as many cases of kidney trouble as the former. They had more lung impairment, too. More than half the members of the groups were partaking daily of unsuitable diet. Doctor Fisk says further about the results:

"I feel justified in asserting that the evidence of widespread premature physical decay, which is suggested by our vital statistics, is to a considerable degree confirmed by actual examination of large groups of supposedly healthy young people. Thousands of people are slowly and inevitably preparing for physical breakdown or premature death, and there can be no more important work for modern medicine than to bring such cases, as early as possible under proper hygienic or medical guidance.'

"And, he adds, 'That there is some particular influence at work causing the upward trend in mortality from organic diseases, seems probable. It may be found in our rapid industrial and social evolution, bringing about a condition of widespread prosperity and lavish expenditure—this relatively extending to the comparatively small wage-earner in the factory.'

"This is not saying much that is helpful. It is too vague to be of appreciable service. But it does prescribe simpler and more rational living, and that surely is a medicine worth trying."—*The Dodge Idea*, March, 1916.



**Fitting Men Instead of Firing Them.**—"When a man finds that the sleeves of his new coat are a trifle too long he may do one of two things—buy a new coat or have the sleeves shortened. There is little doubt that he would choose the latter. Yet until recently, if a workman in a factory failed in some small particular, he was promptly discharged and replaced with a new one. It is coming to be recognized, in the modern program of handling men, that in many cases fitting an unsatisfactory man to his job

is cheaper and better than firing him. This means that the boss who is skilful in handling his men—always an asset in any business—is today an imperative necessity. If we are to 'fit' instead of 'fire,' we must have expert fitters—men to know how the fitting can best be done, whether by instruction, argument, reproof, or simply by 'watchful waiting.' Says the writer of a leading article in *Factory* (Chicago, March):

" 'Employers are coming to realize that, even if no other motive were involved, it costs money to break in new workers. More attention than ever before is being paid to the hiring of men, in order to secure those adapted to the work, that the waste of misfits may be avoided. Similarly, 'firing' is not the light affair that it was once supposed to be.

" 'Modern efficiency believes in curing faults, if possible; in teaching those who are teachable; in transferring from one kind of work to another until the round peg fits the round hole. 'Firing' is regarded as a last resort, reserved for certain flagrant sins, or incompetence that has persisted through numerous opportunities.

" 'This means that more attention than before is being given to the personal side of industrial discipline. . . .

" 'The economic advantage of the new method is easy to recognize, if not to figure in dollars and cents. In general, it may be said that the new type of discipline is based on the 'rule of reason' to a greater extent than in any previous system. Once military discipline, with no explanations and no room for questions, was favored. If the individual did not give his best work under this system, that was supposed to be the individual's loss. The loss in shop-efficiency was not considered.

" 'There are workers who still prefer that form; they have no desire to reason why; theirs but to do or—be fired. As a rule, they are the ones who like to avoid responsibility. Suggestions for improved methods are not likely to come from them.

" 'The best worker is pretty certain to be the one who appreciates a knowledge of the reasons for any deviation from routine-methods. A straight appeal to reason may even correct a fault that could be made to yield in no other way. But it must be a reason that in the mind

of the worker is not trivial, and one that comes within the range of his own point of view. . . .

" 'It makes little difference in what department of work a principle of management be found; it can be adapted to any other where similar conditions of humanity prevail. For men are much the same, whether employed in factory or in office, and the appeal which moves one will almost inevitably move the other.

" 'Perhaps the most common of faults among workers is the lack of ambition. This may show itself in many ways, but always the trouble resolves itself into a fundamental lack of interest in the work. The new science of management has absolutely reversed the old practise in dealing with this failing.'"—*Literary Digest*, April 1.



**Physical Examination of Employees.**—In a recent issue of *Safety Engineering* there appears an interesting review by Dr. W. H. Clarke of the Norton Grinding Company of Worcester, of his work at that establishment. With reference to the physical examination of employees, Doctor Clarke makes this statement:

*How Thorough Should a Physical Examination Be?*

"At Norton Company we find ourselves becoming more and more thorough as time goes on. Each addition to our routine has been made because of necessity and not for theoretical reasons. We now make an examination which takes from 12 to 20 minutes and which includes blood pressure but not urinalysis except in cases of 40 years or over, and in younger individuals when indicated by blood pressure of 150 systolic. Otherwise the examination is about as complete as for life insurance. The patient is completely stripped before it is concluded. We have never had any trouble from men in accepting this examination as a preliminary to being hired. In fact, the majority of men show great interest and thank the doctor for the advice which he gives them in regard to minor defects.

"It has been stated by physicians at different meetings that a complete physical examination should take at least an hour. We are willing to admit that from 12 to 20 minutes is an extremely short time in which to make a complete physical examination, but unless this short time is taken, physical examination of employees in factories

would be impossible without such a large staff of nurses and doctors that the expense would be prohibitive.

"In my work I hear a great deal from the manufacturing side. I find that the enthusiasm of the board of directors is not great toward spending large sums of money for physical examinations and it is very easy to frighten prospective adopters of this system by unnecessarily strict examinations.

"During my experience at Norton Company we have found practically no cases in which our primary physical examination proved later to have been inadequate. And such lapses, when they occur, are rapidly corrected as a result of subsequent treatment."



**Large Percentage of Sickness.**—The responsibility for sickness as a cause of dependency is shown by an investigation conducted by Miss Mary VanVleet of New York for the Russell Sage Foundation.

"The investigation of sickness among wage-earners is still in progress, but certain results have been obtained for the information of those interested in health insurance. From the records, supplemented when necessary by personal interviews, we learned facts about family conditions, industrial history, and environment, losses suffered through illness, the aid given by the community in relief and in care for the sick, unhealthy factors present in the occupation or in home life—in short, the real histories of families in whose misfortunes sickness has played a part in an application for relief or in the course of treatment by the Society. We kept before our minds the question, how frequently is sickness encountered as a factor in dependence?

"A preliminary study of the records of more than 6,000 cases under treatment in a single year in the Charity Organization Society showed that in 37 per cent. the sickness of wage-earners was a factor in the need for aid. In the United Hebrew Charities, the statistician reports 34 per cent. This does not mean that sickness was the sole cause of dependence, but rather that it was a condition found in a very large group of families. It is necessarily an inadequate statement, however, for it does not show that in many families now under care because of family problems other than illness, the past history

might reveal that sickness of a wage-earner was the first step toward dependence, bringing in its train many other causes of incapacity for self-maintenance.

"Under existing conditions the medical care which these wage-earners could command for themselves often was meagre. Of the 700 wage-earners we studied, we found that only 174 had made use of private physicians. The majority had gone from one hospital or dispensary to another.

#### *Low-Paid Branches of Labor.*

"Most of the families studied belonged to low-grade branches of labor. The fact that they belonged to the lower ranks of labor is often accounted for by deterioration following illnesses in the past. We found that nearly 400 of the families had appealed to friends and relatives for help. These friends belonged to a class which could ill afford to give such help, and to do so must have imperilled their own health and strength. Every kind of device to raise the income needed in the different distressed households had been tried. The wives had gone out to work; money had been borrowed, lodgers taken in, and even the children had been sent away from home to state institutions.

"In two-thirds of the cases studied, illness had lasted more than half a year at the time of investigation. Not only was it distressing to contemplate the long period over which these illnesses had extended in the past, but a physician who examined these records to find, as far as possible, the probable date of restoration to health reported a very high rate of chronic disorders.

#### *Much Permanent Sickness.*

"Of the 687 cases studied in this way, the physician estimated 295 as chronic, while 81 were likely to become progressively worse. While these figures cannot be accepted as indisputably accurate, they go to show that among the class of people studied the rate of permanent illnesses is very high. Moreover, it is not unsafe to say that more prompt medical care might have prevented such prolonged suffering, and that upon the medical institutions of the community must devolve the task of giving such prompt and adequate treatment as to guard against the hopelessness characteristic of so

many of the families cared for much later by the charitable societies.

"We can strike an effective blow at poverty by preventing sickness. The health insurance plan puts a cash value on the good health of the worker for the employers, the workers, and the taxpayers.

"The need is for an equitable distribution of the burdens of a common misfortune, for education in hygiene, for an extension of the activities of state and city departments of health, for

opportunity for thorough periodical medical examination to prevent sickness, for larger resources for effective work in hospitals and dispensaries, for better correlation of all medical agencies, and for increasingly effective control of unhealthful conditions both in homes and places of employment. The subject is large and complicated, and certainly worthy of a state commission to make a thorough study of the facts, as a basis for a well-organized programme of action."

## Communications.

### ANNOUNCEMENT.

The Journal desires to call the attention of its readers to the establishment of a new section devoted to "Communications." Readers are invited to address such communications to the Editor. Letters for publication should necessarily be of general interest and deal with some public health subject.

EDITOR, AMERICAN JOURNAL OF PUBLIC HEALTH.

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Dear Sir—The two articles in your March, 1916, issue, "The Control of Scarlet Fever," by A. J. Chesly, M. D., and "Is the Control of Measles and Whooping Cough Practicable?" by Francis George Curtis, M. D., bring up certain points in the practical control of contagious diseases which have been much neglected in the past. Doctor Curtis's article makes a plea for the more intelligent control of measles and whooping cough, and, while admitting the difficulties which stand in the way of practical control, calls for the abandonment of the *laissez faire* policy which has been much adopted on the one hand, and the method of strict isolation on the other hand.

I have already shown (*Jour. Inf. Dis.*, Nov. 1915) a practical method for the control of measles. Doctor Chesly presents a rather elaborate system for the study of scarlet fever out-breaks, by the collection and study of epidemiological data, and shows how this may be

modified to adapt it for the prevention of epidemics, as well as for control when an epidemic is once started.

Both of these papers are valuable in calling attention to the need of the control of these diseases by intelligent and effective methods. But no matter what methods are proved in practice to be successful, they will fail unless administered by full-time health officers with adequate technical training. It is well nigh useless to expect the average practitioner-health officer, who gives but a small part of his time to public health work, to become proficient in such methods, or to apply them in actual practice. The great need in public work is the full-time properly trained health officer; having him, a community may expect that intelligent methods for the prevention of disease will be put into effect.

Respectfully yours,

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